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| 10/532,402  | 04/22/2005  | Marko Siebert        | BM-168PCT           | 9126             |
| 40570   | 7590        | 11/02/2006           | EXAMINER            |                  |
| FRIEDRICH KUEFFNER<br>317 MADISON AVENUE, SUITE 910<br>NEW YORK, NY 10017 |             |                      | KENNY, DANIEL J     |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 3637                |                  |

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/532,402

Applicant(s)

SIEBERT ET AL.

Examiner

Dan Kenny

Art Unit

3637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/22/2005</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information in the information disclosure statement (IDS) submitted on 4/22/2005 was considered by the examiner.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a) because they fail to show an open spacer as claimed and described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required

corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because the specification section headings are missing, and the preferred arrangement of the specification has not been followed. Appropriate correction is required.

The specification is objected to for referencing claim 1 on page 4. Referencing claims in the specification adds nothing to the invention description, and causes confusion because, among other things, claims are subject to amendments, cancellation, and renumbering.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

The following claims are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected because the transition term "consisting of" indicates that the claim is closed in scope. Dependent claims, therefore, may not depend therefrom. For examination purposes, the term "consisting of" is construed to mean "comprising".

The claim 1 limitation claiming the webs as “oriented parallel to the panes” or “inclined towards each other”, is rejected for indefiniteness because this alternative form of claiming the web structure fails to define the invention with a reasonable degree of particularity, clarity, and distinctness.

The claim 1 terms “can be”, on line 4, are rejected as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are the relationship between the spacer and the moisture-absorbing material. The term “communicates” is rejected on the same basis for omitting the structural cooperative relationships between the interior space and the space between the panels.

The claim 1 recitation of the “opposite side”, on line 11, is unclear because, although the pane is apparently on the opposite side of a structure, what that structure is, is not clear. In addition, the meaning of the “opposite side” is not made clear by the specification. The use of a more convention designation such as first side and second side is more typical and acceptable.

Claim 1 is indefinite for defining the structure of the claimed spacer as it relates to the panes, the claims directed to a spacer, and the panes not being given patentable weight.

Finally, the last sentence of claim 1 recites a step lying at a “lower level”, without providing any accompanying reference to a structure showing a comparatively lower position of the step relative to said structure. As a result of the aforementioned

occurrences of claim indefiniteness, the metes and bounds of the language of claim 1 cannot be discerned.

Claim 4 is rejected because it is unclear what a "flexible" spacer means. There is a reference in the specification at the bottom of page 3, indicating that webs inclined toward the panes are unsuitable for flexible spacers, and page 8, second full paragraph, discloses a relationship between concave spacer wall and flexibility. However, this brief description of an apparent "flexible" quality or embodiment of the spacer is not sufficient to define the metes and bounds of the subject matter of claim 4.

Claim 6 is rejected because "is formed in such a way that it constitutes" omits the structural cooperative relationship between the lower corner of the wall and the spacer lower boundary.

Claim 7 is rejected because "preferably butyl sealant" and "preferably polysulfide, polyurethane, or silicone" are indefinite limitations on the particular type of sealant claimed. Since reference numbers are not claim limitations, the term "the space" (lines 2 and 4) is indefinite because it is unclear whether this is one single, or two separate spaces. Therefore, the term "sealant" is similarly unclear.

Claims 9-11 are rejected because it is unclear as to what the term "it" is referring, and the specification apparently does not allow one possessing an ordinary level of skill in the art to discern with the requisite degree of definiteness, to what said term is referring.

The claims will be examined as best understood.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

***Claim Rejections - 35 USC § 102/103***

Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by Larsen (5,679,419) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Larsen in view of Fratti et al. (4,811,532).

Larsen discloses a spacer (S) comprising a generally rectangular open space (Larsen comprises a generally rectangular open space as broadly recited) filled with moisture-absorbing material (42); said open space bounded by side walls (20), a rear wall (94), and an inner wall (17); said spacer rear wall having two webs (19) inclined towards each other and projecting from the rear wall in the direction opposite the open space, the space created between the webs and the panes capable of being filled with sealant (21); and the two portions of the wall (web) outside the bounds of the two webs lying on a different plane (lower or otherwise) than the portion of the wall (25) inside said bounds.

The claim limitation “webs are oriented parallel to the panes, or are inclined towards each other” is being considered a Markush-type claim, and as such, only one member of the group is considered part of the claim to be examined.

Although claim 1 uses the “consisting of” transition, which indicates that the claim is closed in scope, the term has been construed to mean “comprising”, because there are claims depending from claim 1.

**Claim 5** is rejected under 35 U.S.C. 102(b) as anticipated by Larsen.

Larsen discloses all the claimed limitations as described above including perforations (col. 4, lines 43,44) formed in the inner wall (22).

**Claim 7** is rejected under 35 U.S.C. 102(b) as anticipated by Larsen.



Larsen discloses all the claimed limitations as described above including primary (38) and secondary (21) sealants. In addition, for the reasons stated in the above § 112 rejection of claim 7, the limitations reciting preferable sealant materials have not been given patentable weight.

**Claim 9** is rejected under 35 U.S.C. 102(b) as anticipated by Larsen.

Larsen discloses all the claimed limitations as described above including an aluminum (col. 4, line 38) spacer.

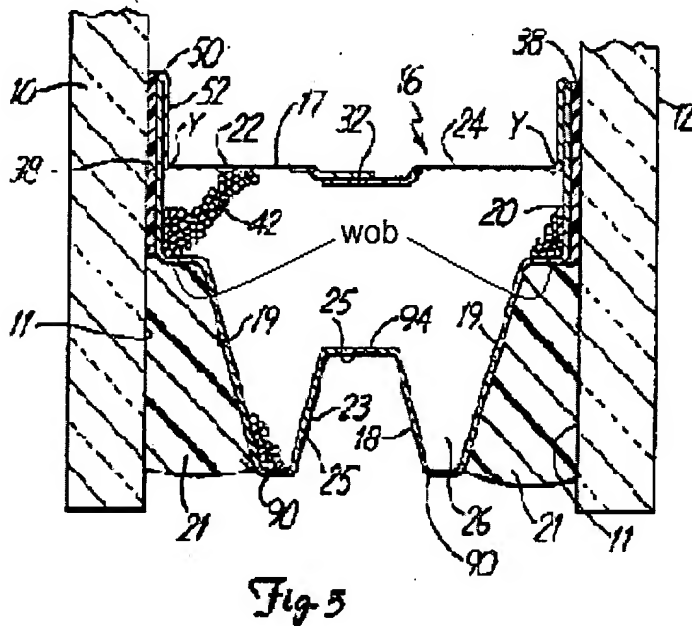
**Claim 1** is rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen in view of Fratti et al.

Larsen discloses a spacer (S) comprising a generally rectangular open space (Larsen comprises a generally rectangular open space as broadly recited) filled with moisture-absorbing material (42); said open space bounded by side walls (20), a rear wall (94), and an inner wall (17); said spacer rear wall having two webs (19) inclined towards each other and projecting from the rear wall in the direction opposite the open space, the space created between the webs and the panes capable of being filled with sealant (21); and the two portions of the wall (wob) outside the bounds of the two webs lying on a different plane (lower or otherwise) than the portion of the wall (25) inside said bounds.

Larsen does not disclose parallel webs.

Fratti et al. discloses a spacer (120) having parallel webs (122).

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to include the parallel webs as in Fratti et al. in the structure of Larsen to provide a uniform sealant thickness.



Annotated Fig. 5 (U.S. Pat. 5,679,419)

**Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen in view of Chinzi (5,640,815).

Larsen discloses all the claimed limitations as described above. The web length of Larsen, however, is not specified. Chinzi discloses a generally rectangular, sealant-saving (col. 3, line 59) spacer (316) with webs (318, 320) having a length of at least 1.5 mm (the calculated minimum web length is 2.4 mm, which is derived by dividing the 1 mm minimum specified thickness of the sealant (col. 3, line 60) at location 342, by the sin of the angle, 25°, of the web with respect to the base 22 (col. 8, line 23)). The calculated web length of 2.4 mm may vary

slightly because the calculation assumes no gap (40) between the end of the web and the pane. However, any variation between said lengths is insignificant because 2.4 mm is significantly greater than the claimed 1.5 mm minimum length, and Chinzi teaches that it is desirable to minimize the gap to prevent thermal bridging (col. 3, lines 34-36).

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to include the 1.5 mm minimum web length of Chinzi in the structure of Larsen to provide sufficient sealant coverage along the panes.

**Claims 3 and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen.

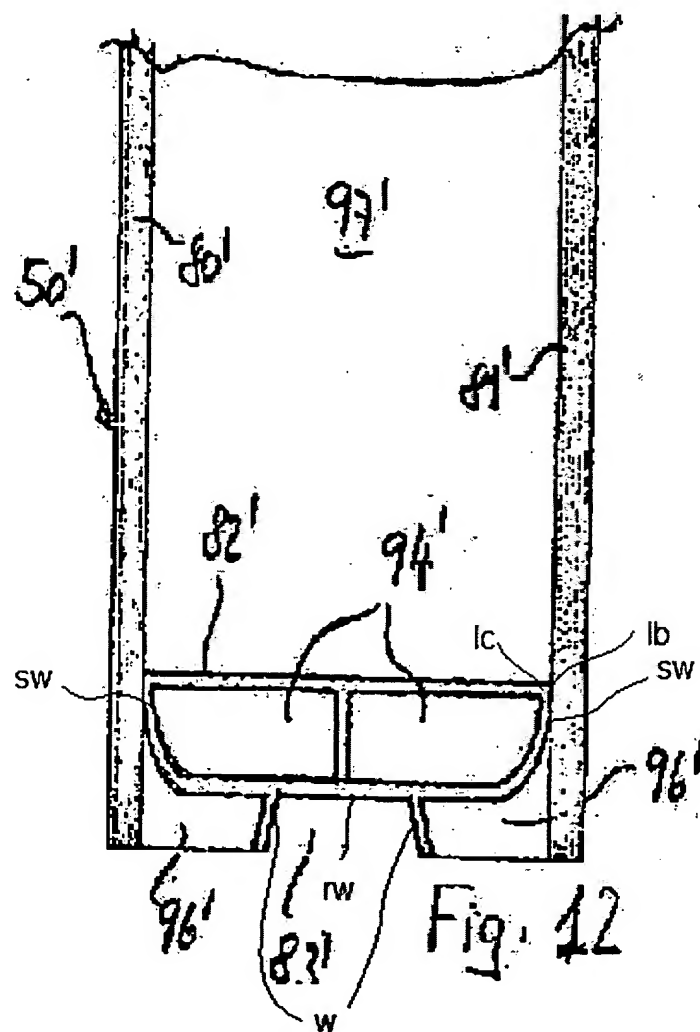
At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to make the web a maximum of 5 mm long because Applicants have not disclosed that making the web a maximum 5 mm long provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Larsen's spacers to perform equally well with a web length of 5 mm because such length would perform the same function of providing sufficient sealing without unnecessarily using too much sealant. The "flexible" limitation has not been given patentable weight.

**Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen in view of German reference 2,224,264.

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Larsen discloses all the claimed limitations as described above. Larsen does not disclose the lower corner of the side wall forming a lower boundary of the sealant space.

German reference 2,224,264 discloses a spacer having webs (w) wherein the lower corner (lc) of the side wall (sw) forms a lower boundary (lb) of a sealant space (96').



Annotated Fig. 12 (German reference 2,224,264)

**Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen in view of Bayer (6,737,129).

Larsen discloses all the claimed limitations as described above. Larsen does not explicitly disclose the inner wall having two grooves, wherein the webs fit into the grooves upon stacking the spacers.

The inner wall (7) of the spacer (3) disclosed by Bayer has two grooves (18), wherein the webs (23) fit into the grooves upon stacking the spacers.

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to include the inner wall having two grooves as taught by Bayer in the structure of Larsen to allow the spacers to be "stacked so as to save space and so that they interlock with each other" (col. 9, lines 13-14).

**Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen in view of Fratti et al.

Larsen in view of Fratti et al. discloses all the claimed limitations as described above, Fratti et al. further disclosing a steel spacer (col. 5, line 37).

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to include the steel spacer material of Fratti et al. in the structure of Larsen to provide high strength.

**Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen in view of Chinzi.

Larsen discloses all the claimed limitations as described above. Larsen does not explicitly disclose a plastic spacer. Chinzi discloses a plastic (col. 4, line 63) spacer (16).

It would have been obvious to one of ordinary skill in the art at the time the present invention was made to include the plastic spacer material of Chinzi in the structure of Larsen to provide minimal thermal conductivity between the panes.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Reeves et. al. (5,640,828), Peterson (6,823,644), Berdan (4,850,175), Peterson (6,351,923), and Schield et. al. (5,088,258) all disclose spacers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Kenny whose telephone number is (571) 272-9951. The examiner can normally be reached on Monday thru Friday, 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lana Mai can be reached on (571) 272-6867. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DK *P.X.*

10/21/2006

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